Name _____ Date _____

7.1 Puzzle Time

Why Did The Pioneers Cross The Country In Covered Wagons?

A	B	C	D	E	F
G	H	I	J		

Complete each exercise. Find the answer in the answer column. Write the word under the answer in the box containing the exercise letter.

concurrent **WAS**	
corner **INDIANS**	
exterior **WAIT**	
midsegment **GOLD**	
2520° **A**	
diagonal **DIDN'T**	
acute **HORSE**	
109° **FORTY**	
octagon **TRAIN**	
100° **FOR**	

Complete the sentence.

A. In a polygon, two vertices that are endpoints of the same side are called _____ vertices.

B. A(n) _____ of a polygon is a segment that joins two nonconsecutive vertices.

C. The sum of the measures of the interior angles of a(n) _____ n-gon is $(n - 2) \cdot 180°$.

D. The sum of the measures of the _____ angles of a quadrilateral is $360°$.

E. The sum of the measures of the _____ angles of a convex polygon, one angle at each vertex, is $360°$.

Find the correct answer to the question for the interior angles of the convex polygon.

F. Two angles of a triangle measure $54°$ and $17°$. Find the measure of the third angle.

G. Find the sum of the measures of the interior angles of a 14-gon.

H. The sum of four angles in a pentagon is $440°$. Find the missing angle measure.

I. The sum of three angles in a pentagon is $320°$, and the other two angles are $(x + 30)°$ and $(x - 70)°$. Find x.

J. What regular polygon has each interior angle measuring $135°$?

|	
interior **TO**	
consecutive **THEY**	
90° **THE**	
non-convex **NOW**	
120° **WEATHER**	
convex **WANT**	
decagon **FIRST**	
130 **A**	
289° **FOR**	
2160° **YEARS**	

7.3 Puzzle Time

What Kind Of Ship Can Last Forever?

Circle the letter of each correct answer in the boxes below. The circled letters will spell out the answer to the riddle.

Complete the sentence.

1. If both pairs of opposite sides of a quadrilateral are _____, then the quadrilateral is a parallelogram.

2. If both pairs of opposite angles of a quadrilateral are congruent, then the quadrilateral is a _____.

3. If one _____ of opposite sides of a quadrilateral are congruent and parallel, then the quadrilateral is a parallelogram.

4. If the diagonals of a quadrilateral _____ each other, then the quadrilateral is a parallelogram.

5. A quadrilateral is _____ a parallelogram.

Find the indicated measure or find the value of *x* that would make the figure a parallelogram.
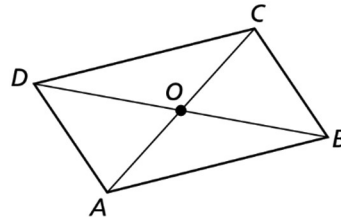
6. $m\angle CDA = m\angle CBA = 72°$, $m\angle DAB = m\angle DCB$. Find $m\angle DAB$.

7. $m\angle DAB = m\angle DCB = 89°$, $m\angle CDA = m\angle CBA$. Find $m\angle CDA$.

8. $DO = 12$, $BO = 12$, $AO = 16$. Find CO.

9. $DC = 4x + 2$, $AB = 5x - 3$, $AD = CB$. Find x.

10. $AD = 2x + 1$, $CB = x + 8$, $DC = AB$. Find x.

F	A	R	O	R	N	I	M	S	E
108°	89°	always	equal	congruent	side	sometimes	12	72°	parallelogram

I	G	N	F	D	S	H	E	I	P
supplementary	6	pair	intersect	16	91°	bisect	24	7	5